Department of Defense

Corporate Information Management

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(Command, Control, Communications and Intelligence)

April 1991

Background

The Joint Appropriations Conference Report (Report 101-938) for FY 1991, "Making Appropriations for the Department of Defense," requested the Department of Defense's (DoD's) Senior Information Resources Management Official to submit a report to the Appropriations Committees of the Congress

> "on the status and progress of the Corporate Information Management (CIM) initiative, to include program milestones, return-on-investment objectives, dates for selection of interim standard systems in each functional area, and anticipated investment costs associated with the development of interim standard systems or the integration of existing systems with the interim standard architecture."

The purpose of this report is to respond to Conferees' request.

Also in Report 101-938, the Conferees centralized funding of development, modernization, and procurement for CIM-related automated information systems in the Office of the Secretary of Defense. To this end, the Conferees provided $1 billion of development and modernization operation and maintenance funding to the Secretary of Defense, and moved some procurement funding for Service-proposed systems to the CIM funding line in Procurement, Defense Agencies.

This report also includes a description of the disposition of the FY 1991 CIM funding, as it was centralized according to the Conferees' instructions.

Defining Corporate Information Management

The Corporate Information Management initiative is part of the President's overall effort to improve the management of the Department of Defense. In response to the President's direction to "realize substantial improvements . . . in defense management overall," the Secretary of Defense issued the Defense Management Report (DMR) in July 1989. The DMR contains outlined policies and directions the DoD is taking to maintain or improve defense capabilities, even in times of austere resource availability.

One of the important tenets of the DMR is that the members of Department will be "encouraged to examine and improve continuously the processes in which they are engaged -- and to raise, at all levels, new ideas and approaches that will contribute to a sound, affordable program to maintain adequate U.S. military strength." This must be done to take full advantage of opportunities for cost savings and quality improvement.

Accordingly, the Deputy Secretary of Defense announced in October 1989 the Corporate Information Management (CIM) initiative, to reduce non-value-added work and costs, and to improve the management of DoD's information.

CIM is one of the management methods for achieving DMR cost reductions while maintaining or improving the effectiveness of DoD military missions. The primary objective of CIM is business process improvement. The role of information technology is supportive and allows the adoption of more efficient and effective business area management practices.

CIM acts an enabler for many DMR initiatives and their associated cost savings. This includes DMR initiatives such as reducing supply system costs, consolidation of supply depots, consolidation of financial operations, stock funding of

reparables, reducing transportation costs, and better management of Defense Agencies.

Computing and communication technology make possible new business methods which are not otherwise practicable, but the decision to use technology must be made within the context of DoD's mission and policy. The extremely large and complex logistics operations in the Persian Gulf employed information technology to mark and track individual items, plan depot repairs and critical asset redistribution, and rapidly determine aircraft cargo loads. These process improvements were enabled by advances in information management, but the bottom line in each case was the added contribution to mission achievement.

To achieve its objectives of transforming the DoD business practices, the CIM program will follow the principles of

- Centralized direction of functional methods, but decentralized execution.

- Application of business case analysis to functional and information technology decisions.

- Centralized guidance on how to apply standard information technology.

- Managing risk through the evolutionary migration of existing systems, salvaging and revising existing know-how and software to the maximum extent possible.

- Benchmarking new business methods and systems against the best accepted practices.

In establishing the CIM initiative, the Deputy Secretary of Defense directed that DoD examine successes in industry, suggesting that these same successes could be achieved in the Department. To evaluate the depth of DoD's information management issues, he convened an Executive Level Group (ELG) of high-level industry and Defense officials to recommend an overall approach and action plan for improving information management throughout the Department. The ELG was set up as a

Federal Advisory Committee reporting directly to the Deputy
Secretary of Defense.

The ELG began its work in early 1990. In looking towards
DoD's information needs for the future, the ELG made its
projections from three perspectives:

(1) policy direction to down-size and refocus the U.S.
defensive posture in light of changing threats,

(2) management of information as an enabler for improving
the Department's business methods and operations,

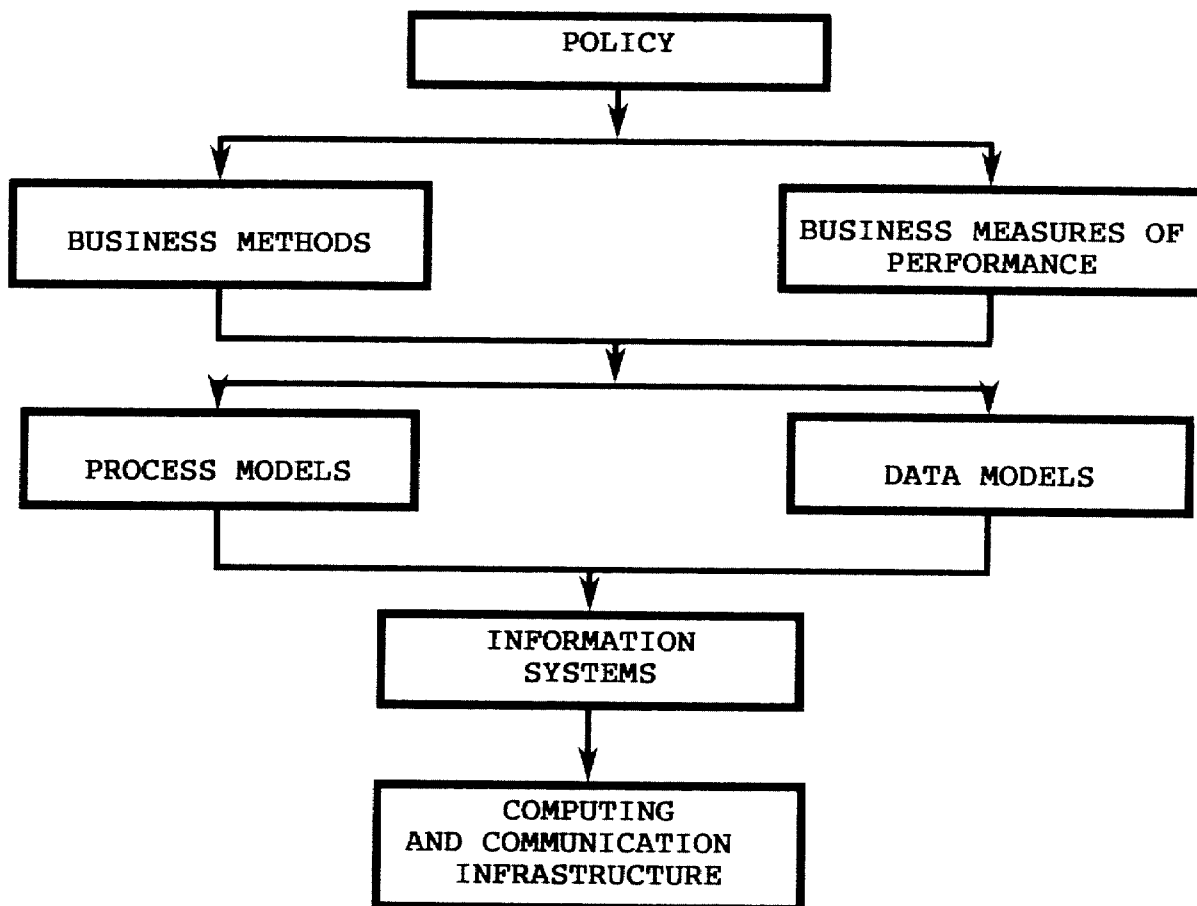(3) information technology available as a supportive
infrastructure.

The ELG submitted its plan to the Deputy Secretary of
Defense, who endorsed the plan on November 16, 1990. The
concepts set forth in the plan serve as a guide for
implementation of CIM principles throughout the Department. The
concepts are being accepted DoD-wide because they are mission
driven, support functional responsibility and accountability,
focus on business methods and practices, and introduce to the
Department a mission-oriented discipline for information
management.

The Department takes a broad view of information
management as a means for achieving DMR savings. This wider
view includes information as an asset, to be managed in much the
same manner as capital, materiel, and people. Forward-looking
organizations take a path which puts primary emphasis on
continual improvement of business methods, with information
being one of the assets available to carry out those
improvements in methods.

The ELG plan describes the use of information technology
thusly: Management of information begins with policy, which are
the guiding principles and operating fundamentals. Business
methods represent a selected and defined approach to executing
the operation of the DoD organization. Measures of business

performance provide insight to the strengths and weaknesses of operations; appropriate measures may include cost, responsiveness of service, and quality of service. Process models graphically described tasks to be performed and their sequencing. Data models show the information necessary to execute business tasks; data may need to be shared among several business tasks, such as having a Social Security number being a shared item among personnel, payroll, and reserve mobilization tasks.
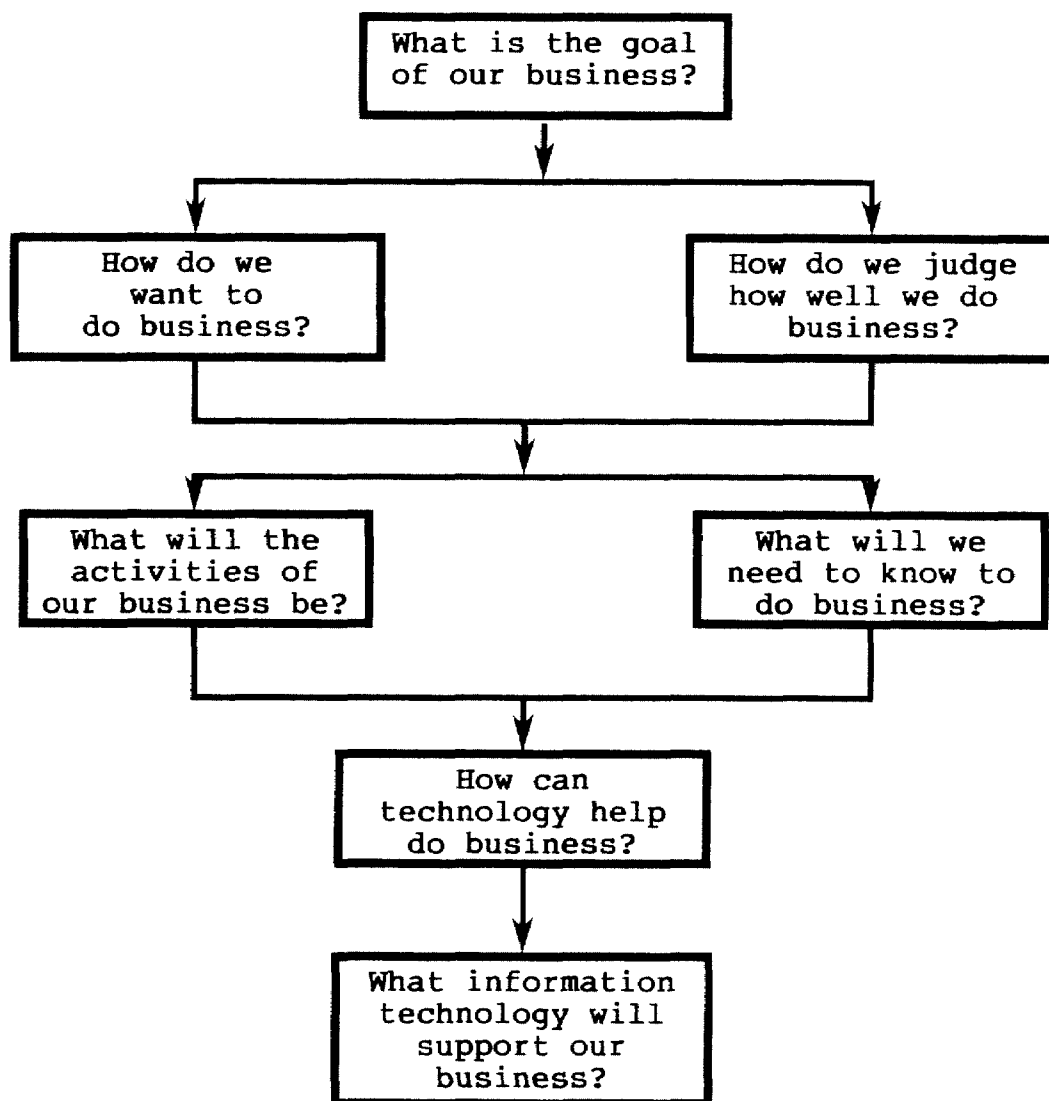
The following depicts the model described in the ELG plan:

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                        │      POLICY      │
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            ┌────────────────────┴────────────────────┐
            ▼                                          ▼
┌───────────────────────┐              ┌───────────────────────────┐
│   BUSINESS METHODS    │              │  BUSINESS MEASURES OF     │
│                       │              │      PERFORMANCE          │
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│    PROCESS MODELS     │              │       DATA MODELS         │
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                    │     INFORMATION       │
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                    │      COMPUTING        │
                    │  AND COMMUNICATION    │
                    │    INFRASTRUCTURE     │
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The application of information systems comes into play only after revised business processes have been examined thoroughly and agreed upon. This is important as CIM is not about information technology per se, but will enable benefits to be

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reaped through improvements to functional processes and the ways
we do business in DoD.

As shown in the model, information systems come into the
planning process only after business policies, procedures, and
measurements have been considered. Restated as a series of
questions, the model becomes an examination of business
strategies first, and an information management plan second.

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                    │ What is the goal    │
                    │ of our business?    │
                    └─────────────────────┘
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┌─────────────────┐                          ┌─────────────────┐
│    How do we    │                          │ How do we judge │
│     want to     │                          │  how well we do │
│  do business?   │                          │    business?    │
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│ What will the   │                          │  What will we   │
│ activities of   │                          │ need to know to │
│ our business be?│                          │  do business?   │
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                    ┌─────────────────────┐
                    │      How can        │
                    │ technology help     │
                    │   do business?      │
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                               │
                               ▼
                    ┌─────────────────────┐
                    │ What information     │
                    │ technology will     │
                    │   support our       │
                    │    business?        │
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Information systems and technology can, however, make possible changes in business methods that would have been otherwise infeasible. Barcodes and hand-held scanners allow inventories to be tracked without checking it into and out of a warehouse. Smart cards carry complete and accurate medical records without having to transport bulky manila folders. Decisions to use information technology must be driven, however, by a business need for new ways of doing business, such as lowering costs or finding a more accurate and timely way of tracking inventory.

Use of information systems must facilitate, rather than hinder, access to data. To do this, DoD's computer and communications systems must give access to data that is needed by appropriate users, while keeping unauthorized users out. DoD's computers must be able to share data without requiring cumbersome translation, so, under the CIM initiative, DoD is increasing its efforts towards data standardization. DoD's computers need to allow for software portability to prevent dependence on any individual computer manufacturer, so under the CIM initiative, DoD is directing its movement towards an open systems architecture.

Major Accomplishments

In the last year, the CIM initiative has made significant progress in meeting its goals in several important areas. It has laid the foundation for long-term strategies, and it has demonstrated the feasibility and viability of the initiative at the operational level.

Key to the progress in the first eighteen months of the initiative is the high level of cooperation that has developed among the senior managers of the DoD Components. The CIM initiative is a joint and cooperative effort and has the full support and interest of the Secretary of Defense and the Deputy Secretary of Defense. The "jointness" of the CIM initiative is exemplified to two major accomplishments -- the progress made in the CIM functional groups and the cooperative allocation of the $1 billion CIM Transfer Fund set up by the Congress for FY 1991.

Functional groups

At the same time the Deputy Secretary of Defense established the Executive Level Group to advise on an overall direction for the Department, he also set up groups to examine eight business areas and the information management of each.

Groups of experts from across the Military Departments and Defense Agencies are now convened to examine and document the functional requirements in their respective areas of responsibility. The initial set of areas is as follows: Civilian Payroll, Civilian Personnel, Contract Payment, Distribution Centers, Financial Operations, Government Furnished Material, Materiel Management, and Medical. These groups, for the first time, bring together functional experts across the Department in a major collaborative effort to improve the efficiency and effectiveness of each function.

Each Service and selected Defense Agencies contribute to the membership of each group. OSD provides leadership and administrative support for each group. Members of each group remain permanently assigned to their home organizations but are detailed full time to the group for its duration. The functional groups are supported across DoD organizational lines:

Membership of Initial Eight Functional Groups

Group	Army	Navy	Air Force	Defense Agencies	OSD	Totals
Civilian Payroll	3	3	3	3	4	16
Civilian Personnel	5	6	5	7	4	27
Contract Payment	4	2	2	6	4	18
Distribution Centers	4	3	3	3	5	18
Financial Operations	5	9	7	4	5	30
Government-Furnished Material	1	1	1	2	4	9
Materiel Management	8	7	5	10	4	34
Medical	9	5	8	6	4	32
TOTAL	41	38	36	43	34	184

The eight groups are working from a single set of procedures that follow closely the model described by the Executive Level Group. The emphasis is on looking to the future to determine upcoming needs and the ways to do business in each area. The process provides a measurement of each group's progress, and consists of three phases: Functional Vision, Functional Business Plan, and Information Systems Strategy.

Phase I - Functional Vision. Phase I focuses entirely on the business aspects of a function and develops a visionary perspective of the function as it will ultimately evolve.

Phase II - Functional Business Plan. Phase II develops strategies for meeting the future vision, documents the current environment and functional requirements, projects the future environment and functional requirements, and formulates the business plan for management decisions.

The first two phases are the province of the functional groups, and their activities are shown as follows:
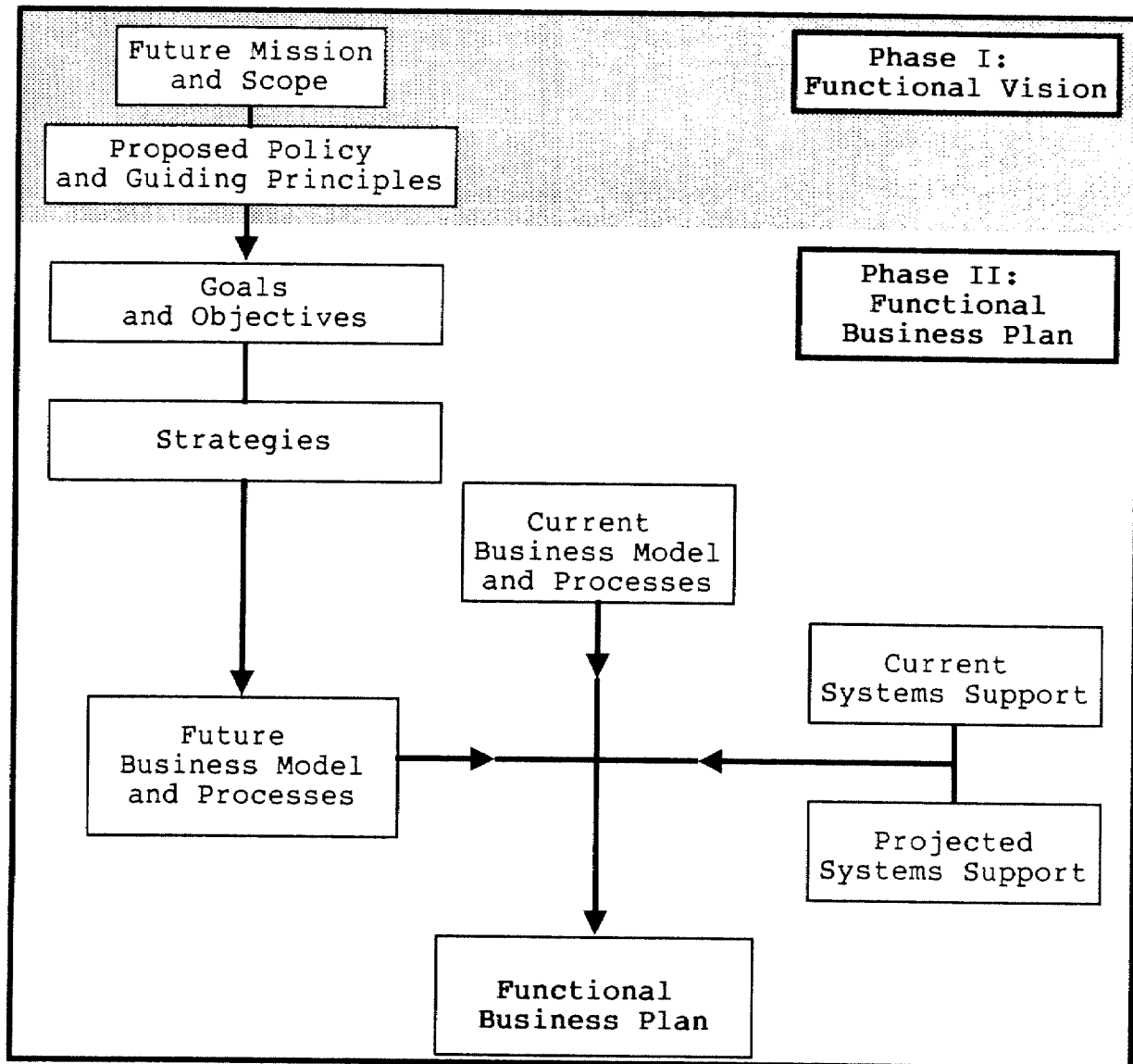
In most functional areas, these joint functional business plans -- including strategies and plans for moving forward to yield cross-Service management requirements and redesigned business practices -- will be the first of their kind.

Phase III - Information Systems Strategies. After completion of the Functional Business Plan, responsibility for execution will be under functional management. Proposed and existing business methods are to be subjected routinely to business case analyses that include benchmarking against the best public and private sector achievements. New business methods which have clearly been demonstrated as cost effective via a business case are to be prototyped before full implementation. Several groups will be completing their functional planning products in the next few months and will be working with the their functional management to develop more detailed information systems strategies.

The initial eight functional groups have all completed the Functional Vision of their respective areas, and all are proceeding through Phase II. During the study of the current function of this second phase, several hundred business practices are analyzed, and hundreds of possibilities for near term improvement have already been identified. These improvements should result in a significant savings to the department through the elimination of unnecessary practices.

Among the techniques being used by the functional groups is benchmarking with industry and other government agencies. The civilian personnel group has found this technique particularly useful. Members of the working group have visited with organizations having exemplary human resource management programs, such as Federal Express, Florida Power & Light, and IBM. Members of the group have also been in direct contact with other corporations with outstanding personnel practices, such as Marriott, General Electric, Wal-Mart, and Monsanto. Through these efforts, the group is developing recommendations for

changes to DoD's civilian personnel practices. Changes to
supportive information systems will be developed in accordance
with these revised business practices.

A chart showing more detailed information on the status of the
groups follows [time lines in graphic form may tell the story
better]:

PROGRESS OF THE INITIAL EIGHT FUNCTIONAL GROUPS

Functional Group	Start Date	PHASE I FUNCTIONAL VISION completion	PHASE II FUNCTIONAL BUSINESS PLAN estimated completion
Civilian Payroll	December 1989	August 1990	April 1991
Civilian Personnel	April 1990	September 1990	April 1991
Contract Payment	June 1990	February 1991	May 1991
Distribution Centers	December 1989	September 1990 (check this)	April 1991
Financial Operations	March 1990	October 1990	October 1991
Government-Furnished Material	February 1990	January 1991	Jun 1991
Materiel Management	May 1990	December 1990	September 1991
Medical	April 1990	July 1990	November 1991

Following the joint analytical process laid out under the
CIM initiative has caused a number of inter-functional
discussions that might never have taken place, each of which
resulted in better understanding of the direction DoD is going
or needs to go. In the medical area, the functional group is
taking an interdisciplinary, departmental look at services that
support their area, such as financial, material, and personnel
services and itemized areas or actions for follow-on work. The

groups are also influencing examination of services other than information technology which support their business strategies and can be shared jointly. For example, the Military Services have formed a consortium to look at providing centralized joint training in some civilian personnel areas.

The initial eight groups, in addition to supporting their own functional areas, also provide direct support to the overall DoD information management area by being the prototypes for examining the policies and processes in all DoD business areas. The first eight groups are setting the stage for the business case to be the driver in DoD's information management decisions, with information systems providing support for carrying out those decisions.

Disposition of the FY 1991 $1 Billion CIM Transfer Fund

The FY 1991 Defense Appropriations Act reduced the Department operations and maintenance request for information technology development and modernization by almost 30 percent, from $1.374 billion to $1 billion. Furthermore, it transferred the $1 billion to the Office of the Secretary of Defense (OSD) for central management and allocation consistent with the Corporate Information Management (CIM) initiative.

Immediately upon enactment, the DoD Comptroller, through the Deputy Comptroller (Information Resources Management (IRM)), established a working group to carry out the requirements of the Act. DoD Components submitted to OSD details on the systems included in their modernization efforts as described by the Congress, with the number of related systems as follows:

COMPONENT	# SYSTEMS
Army	109
Navy	128
Air Force	124
Defense Logistics Agency	21
OSD	7
TOTAL	389

To ensure allocation of the central funds as necessary to "further the objectives of the Corporate Information Management initiative," in accordance with the Act, the Deputy Comptroller (IRM) worked with functional management representatives to set criteria for development programs to receive funding.

OSD functional manager representatives identified 42 information systems in areas covered by the initial eight functional groups during FY 1991, totaling $224 million. As for other DoD information systems, funds had been expended for the first 45 days of FY 1991 under continuing resolutions. For these 42 systems, $79 million was allocated to cover FY 1991's first four months of funding. The $145 million remaining for the 42 systems was withheld from allocation until formal designation of Executive Agents was made for the initial CIM functional areas. (Executive Agent designation is discussed later in this report.)

The initial allocation was approved by the DoD members of the CIM Executive Level Group on December 24, 1990. This amount is included the $79 million discussed above. Also, a total of $701 million that was allocated on a specific system basis to support previously approved modernization requirements in areas not related to 1991 CIM functional groups. The allocation was based on a prioritized list of systems and included command and control systems. This included no funding for new starts in FY 1991. In addition, a total of $26 million was allocated to Executive Agents in the materiel management area.

The transfer of Operations and Maintenance funds to the DoD Component appropriations required prior OMB apportionment approval. This approval was obtained January 28, 1991, when OMB granted DoD's request for exemption to apportionment requirements due to Desert Shield/Desert Storm. Further delays, in allocating funds to program offices, were experienced in the DoD Components.

Subsequently, Executive Agents for the functional areas were designated and the remaining $145 million for the 42 systems was allocated on March 27, 1991. An additional $8.8 million was allocated on the same date to a high-priority logistics program. The $39 million balance remaining from the $1 billion will be allocated in May 1991.

CIM Program Status and Progress

The progress made by the ELG and the initial functional groups has already been discussed. Along with this progress, the organizational structure for carrying out the CIM initiative has evolved to meet program management, oversight, and execution needs to improve information management on a departmentwide basis.

While the organizations for carrying out DoD's CIM initiative have undergone structural changes, the CIM program continues to have as its primary object to facilitate the adoption of more efficient and effective management practices and improve DoD's business processes. This includes improving the standardization, quality, and consistency of data in the in the Department's management information systems and more effective use of these information systems. CIM, by its scope and nature, is a long-term effort.

CIM Program Organization

At the inception of the CIM initiative, responsibility for setting up and carrying out initial studies and tasks was within the office of the DoD Comptroller, the DoD Senior Information Resources Management (IRM) Official. The Deputy Comptroller (IRM) was given primary responsibility for setting up, facilitating, and supporting the Executive Level Group and the initial set of functional groups.

The DoD Comptroller also served as one of the three DoD members of the ELG, the others being the Assistant Secretary of Defense (Command, Control, Communications and Intelligence) (ASD(C3I)) and the Assistant Secretary of Defense (Program Analysis and Evaluation) (ASD(PA&E)). The group also drew six expert members from the private sector, with one of the industry members serving as chairman of the ELG.

In endorsing the ELG's Plan for Corporate Information Management for the Department of Defense, the Deputy Secretary of Defense also assigned responsibility to the ASD(C3I) for establishing an organization to implement CIM throughout the Department and for ensuring the proper integration of DoD computing, telecommunications, and information management principles. The ASD(C3I) has put into place an organizational infrastructure to provide CIM with the highest levels of functional and technical guidance, and information exchange in the Department. Concurrently, the ASD(C3I) is now the DoD Senior IRM Official and the chairman of the Major Automated Information System Review Council (MAISRC).

The organizational framework has been put in place to support the CIM function and to serve as the focus for this vital area both within and without the Department. To accomplish this, the ASD(C3I) has established a Director of Defense Information (DDI), at the Principal Deputy Assistant Secretary level, with a supporting staff. This Director has overall responsibility for implementing the corporate information program across the Department. This includes the development and implementation of information management policies, programs and standards and the integration of the principles of information management into all of the Department's functional activities. In addition, within the OASD(C3I), a Deputy Assistant Secretary of Defense for Information Systems (DASD(IS)) with responsibility for review and oversight of ADP programs and information services has been established, along with a supporting staff.

The DDI is implementing a functional information management process to document business methods, rationalize functional information management programs, and enable users to achieve improved information management support. This is emphasized through the establishment of the DDI's Deputy Directors for

Finance, Personnel, and Health Functional Information Management
(FIM), Materiel and Logistics FIM, and C3I FIM.

To provide further valuable technical and program execution
assistance, the Center for Information Management within the
Defense Communications Agency (DCA) is being established. DCA
will be redesignated as as the Defense Information Systems
Agency. The Center will perform such functions as:

- support the information technology standardization area
of the defense standardization and specification program;

- assist in the production of process and data models;

- help to identify alternative approaches, methods and
tools for the development of process models and data
models;

- develop DoD standard information technology
architectures;

- assist in the development, coordination and execution of
the DoD data administration program and provide the
technology support to achieve the objectives of that
program; and

- assist in assessing the efficiency and effectiveness of
information services in DoD.

Management of information beings with policy, as was shown
in the model described by the ELG. To ensure highest level
policy direction for DoD information management, Functional
Steering Committees are in place to review the products and
recommendations of the appropriate functional groups. Each
committee is chaired by the Assistant Secretary of Defense (ASD)
of the pertinent function, and participants are the senior
officials responsible for the function across the DoD
Components. The DoD Senior Information Resources Management
(IRM) Official serves on all committees. The initial set of
Functional Steering Committees, their chairs, and the applicable
functional groups are as follows:

CORPORATE INFORMATION MANAGEMENT
FUNCTIONAL STEERING COMMITTEES

FINANCIAL MANAGEMENT

Chairman: Mr. Sean O'Keefe, DoD Comptroller.

Functional Groups: Civilian Payroll
Contract Payment
Financial Operations
Government Furnished Material

HUMAN RESOURCES MANAGEMENT

Chairman: Mr. Christopher Jehn, Assistant Secretary of Defense (Force Management & Personnel).

Functional Group: Civilian Personnel

MEDICAL

Chairman: Dr. Enrique Mendez, Jr., Assistant Secretary of Defense (Health Affairs).

Functional Group: Medical

PRODUCTION AND LOGISTICS

Chairman: Mr. Colin McMillan, Assistant Secretary of Defense (Production and Logistics).

Functional Groups: Distribution Centers
Materiel Management

The CIM initiative also requires support and understanding by the IRM community. To facilitate this, the ASD(C3I) is also establishing a DoD Information Policy Council (IPC) to exchange information management concepts and plans and to provide a forum for the exchange of a full range of views on achieving the goals of CIM. The IPC will be chaired by the ASD(C3I) and will assist in shaping Defense and Federal IRM policy matters affecting defense information management. A key subelement of the IPC is the CIM Council, which was formed in early 1990 and is chaired by the DASD(IS). The CIM Council has met one to two time per

month since its formation, and has proved itself vital to the building and maintaining and understanding of CIM principles throughout the DoD Components. The CIM Council will be renamed the Information Policy Subcouncil.

Recently, the DDI established the Information Technology Policy Board to address joint technical issues, such as programming languages and compliance with data standards. This board is very active, meeting weekly, and is chaired by the DDI.

Strategies for Implementing Information Management

The Executive Level Group identified the following eight strategies, which are being used as a basis for formulating further CIM plans:

1. PROCESS MODELS

Early emphasis will be placed on documenting new and existing business methods throughout the Department's major functional areas. This will be accomplished to be sure that functional improvements truly drive all of our future information systems decisions. The use of process models is one way we will determine cross-Service methodologies and move to Joint programs while maintaining or improving quality of support to any given organizational element.

2. MEASUREMENT OF EFFECTIVENESS AND EFFICIENCY

The Department will establish an aggressive program to identify and install functional, technical and cost measures of performance as an essential element to establish proper controls for information management. This will allow the Department's measures of business performance to focus upon quality, costs, productivity, and time-based performance. These measures will allow benchmarking against the best comparable achievement in the public and private sectors, and will be integral to making investment decisions in new business information systems.

3. MANAGEMENT OF EXPENDITURES

The ASD(C3I) will work with the DoD Comptroller and the
Defense Finance and Accounting Service to ensure the capture and
management of all costs for information systems. This long-term
effort will require us to update our supporting accounting
systems to gather the cost data necessary to move towards a fee-
for-service environment. Within a fee-for-service environment,
information services will be accounted for in much the same way
as an organization's personnel or contracting expenses.
Measurement of information support expenses will be a management
tool for assessing a system's efficiency.

4. COMMON INFORMATION SYSTEMS

Work is progressing towards our goal of developing and
implementing a set of cost effective, common information systems
based upon process models and data standards. Development of
Functional Information Management plans, to coordinate
information systems directions and developments across the
functional areas of the Department, will provide the basis to
identify where common systems can be employed and when systems
should be unique. This is a high-priority area.

5. OPEN SYSTEMS INFRASTRUCTURE

We intend to promote the development and implementation of
a communications and computing infrastructure based upon the
principles of open systems architectures. Establishment of the
architecture identified in this strategy is a long-term effort
but a key link in our plans, since it will free DoD from the
software locks in proprietary systems that hinder the move to
new technology. The overall architecture must be open and
capable of accommodating a wide variety of centralized and
distributed technologies and products.

6. DATA MANAGEMENT

The Department intends to assume a strong leadership role to
assist in accelerating the development of open systems standards

and will continue to work in concert with national and international standards bodies. In particular, DoD is working as a partner with the Commerce Department's National Institute for Standards and Technology.

7. LIFE-CYCLE MANAGEMENT METHODOLOGY

Strengthening of this cornerstone information management policy will govern the implementation of CIM principles in the automated information system development process. We will build upon our existing life-cycle management methodology to include process models, data models, updated system development and acquisition methodologies, and educate the user and technical communities on its use.

8. EDUCATION

We must educate Department personnel in the concepts of CIM and the plans to apply it. The Information Resources Management College of the National Defense University is the leader in meeting the Department's education needs in this area.

To execute these strategies, the ASD(C3I) and the DDI formulating program plans and are working with the Services and Defense Agencies to address specific areas of concern. Among these are standards implementation and functional vice technical roles and responsibilities.

In carrying out the CIM strategies, a balance must be struck between the long-term goals of information management and the near-term needs of DoD missions. Also, DoD has in-place information systems and business practices that must be taken into account in the move to improved information management.

Migration Systems and Executive Agents

The Department of Defense has a sizable investment in installed information systems that provide required functional capabilities. It is important to determine whether there are opportunities for taking advantage of these existing resources as joint requirements are determined and must be met. Consequently, the Department developed mechanisms in the summer of 1990 for examining existing systems and for assigning responsibility for accelerating the migration to systems emerging from Phase II plans by means of "interim" systems.

The "interim" systems concept designed to save ADP money today by transitioning to fewer systems supporting the same function in the near term, without major changes in business processes. The business plan and subsequent information systems strategy will detail the approach to migration. The future is not sacrificed by operating existing systems until the functional groups complete Phase III and the Department establishes the open architecture policy and rules for the future.

Guidelines for selecting systems for migration were developed to meet day-to-day operational requirements, while maximizing the use of limited resources and eliminating duplicative automated information systems (AIS) development. This is to set the stage for evolution of DoD's information systems to meet joint requirements and to become more responsive to improvements in DoD's business processes.

Migration systems are selected only when DoD's selection criteria, as issued by the DoD Comptroller in June 1990, are met:

• A migration system will be employed only if net benefits accrue to the Department prior to deployment of a standard system whose development is based on the CIM model.

• A selected migration systems must meet functional requirements, based on the current functional concept of operations, and is applicable and acceptable across DoD Components.

• A selected migration system must be flexible enough to adjust to functionally drive operational changes.

• A selected migration system must be operational or in an advanced state of development and be partially implemented. A migration system may be a system that is operational in one of the Components or it may be a hybrid system composed of modules taken from currently operational systems.

• System implementation must be technically feasible; that is, it must address the ability to interface with related functional areas.

• An acquisition strategy must be feasible to support the transition.

A key criterion requires benefits to exceed costs. It must be recognized that if, even if an information system meets all other criteria -- a difficult test -- but the cost of fielding that system to other Components exceeds its benefits, the Department does not accept that system for migration.

As teams of experts in their areas, the CIM functional groups were asked to provide nominations on candidate systems for use as migration systems to their respective Functional Steering Committees for review. The Functional Steering Committees then nominated candidate systems to the DoD Senior IRM Official for approval.

In addition, executive agents in the eight initial functional areas have been designated by the DoD Senior IRM official to act as stewards in the migration of systems in their functional area. Part of their mission is the responsibility to obtain the maximal benefits from the use of limited resources. Executive agents must submit a technical plan, which includes

feasibility, economic and technical analyses, to the appropriate Functional Steering Committees for review and to the DoD Senior IRM Official for approval. Identification of funding for migration systems is also the responsibility of the executive agents for their respective functional areas. Resources for the multiple systems to be replaced by the migration systems will be transferred to the executive agents for use in administering the transition to the migration systems.

Some example of the role of the functional groups and executive agents in the migration of systems is as follows:

1) The Medical area has received approval for twelve systems by the Senior IRM Official for migration. In the medical area, most major systems are already quad-Service or scheduled for replacement by a quad-Service system. Some of the selected medical systems are expected to operate well into the 1990s, such as the Composite Health Care System (CHCS).

2) A decision for the Civilian Personnel function has been made. The Air Force Personnel Data System-Civilian (PDS-C), of which the Personnel Concept-III system is an integral part, was selected. The Secretary of the Air Force is designated as the acting DoD Executive Agent until the ASD(Force Management and Personnel) provides a final recommendation.

Orderly implementation of incremental improvements to systems is essential to avoid the degradation of the information processing capabilities achieved to date through endeavors undertaken jointly by the functional communities and the automated data processing communities over the past ten years. The migration from interim to future systems must be evolutionary; it must be free of periods of discontinuity that would deprive the Department of Defense of its access to information and would disrupt DoD's mission functions. To achieve this objective, the migration of systems will be

designed in such a way as to maintain a balance between a rate of transition and the ability of DoD Components to absorb the changes that must occur. This will be done in such a way as to retain within the individual Components sufficient capability to define and articulate requirements to meet its special mission-related needs and legitimate managerial preferences.

The selected migration systems in the initial eight functional areas and the associated executive agents are:

APPROVED EXECUTIVE AGENTS AND MIGRATION SYSTEMS

FUNCTIONAL AREA	APPROVED EXECUTIVE AGENTS	APPROVED MIGRATION SYSTEMS
Civilian Payroll	Defense Finance and Accounting Service (DFAS)	
Civilian Personnel	Air Force	Air Force Personnel Data System - Civilian (Approved 3/4/91)
Contract Payment	DFAS	
Distribution Centers	Defense Logistics Agency (DLA)	
Financial Operations	DFAS	
Government Furnished Material	DFAS	
Materiel Management • Asset Management • Acquisition Management • Item Introduction • Requirements • Distribution	Army Navy Marine Corps Air Force DLA	

APPROVED EXECUTIVE AGENTS AND MIGRATION SYSTEMS

FUNCTIONAL AREA	APPROVED EXECUTIVE AGENTS	APPROVED MIGRATION SYSTEMS
Medical	Defense Medical Systems Support Center (DMSSC)	• Automated Quality of Care Evaluation Support System (AQCESS) • Composite Health Care System (CHCS) • Computer Assisted Processing of Cardiograms (CAPOC) • Defense Blood Management Information System (DBMIS) • Defense Medical Regulating Information System (DMRIS) • Medical Expense and Performance Reporting System, Expense Assignment System, Version 3 (MEPRS/EAS III) • Tri-Service Food Service System (TRIFOOD) Tri-Service Micro Pharmacy System (TMPS)
	Army	• Theater Army Medical Management Information System (TAMMIS) • Veterinary Services Automated Data Management System (VSADMS)
	Navy	Shipboard Nontactical ADP Program (SNAP) Automated Medical Systems (SAMS)
	Air Force	Automated Patient Evacuation System (APES) (All approved 12/24/90)

   The executive agents will be responsible for the life-cycle of these approved migration systems and beyond, since the functional business processes within each area must continually be analyzed for improvement.

Budget Status and Plans

Beginning with FY 1991, the DoD budget request includes a central account for new, standardized systems as part of the CIM initiative. The current funding line for this account is as follows (dollars in millions):

Appropriation	FY 91	FY 92	FY 93
Operations & Maintenance	50.0	179.4	257.6
Procurement	79.1	40.0	60.0
TOTAL	129.1	219.4	317.6

This CIM Central Fund does not involve the $1 billion CIM Transfer Account set up by the Congress in its mark of the FY 1991 DoD budget request. It does, however, include the procurement funds directed by the Congress for use by the CIM initiative in FY 1991.

The primary purpose of the CIM Central Fund is for development of common information systems, which may include some funding for migration systems. To establish the CIM Central Fund, the Deputy Secretary of Defense reduced the funding for development and modernization of automated information systems in the Services and Defense agencies beginning in FY 1991. The reduction to each of the Components was phased, starting as a low percentage in FY 1991 and increasing the percentage reduction up to FY 1995. Recognizing that funding is needed to develop the standard information systems, about a third of the reduction was placed in a CIM Central Fund.

Considering only the savings associated with information systems, CIM produces a net savings of over $2 billion from FY 1991 to FY 1995. Significant reductions continue to be anticipated as a result of eliminating duplicative development and modernization of multiple systems for the same functional requirement as well as future reductions resulting from

maintaining fewer information systems. These anticipated reductions result from slowing development and modernization in anticipation of the full implementation of a CIM environment with common data standards, open systems architecture, as well as changing business practices in determining future investment and financing of systems. The anticipated reductions are offset in part by investment costs needed to design new systems, to procure related equipment and systems development tools, and update the skills of DoD's systems developers. The anticipated information technology budget reductions and investments are estimated in millions of dollars as follows:

SERVICE/AGENCY	Appropriation	Total
Reductions:		FY 1991-FY 1995
Army	All	1,162.8
Navy	All	1,312.1
Air Force	All	791.2
Defense Agencies	All	141.0
Gross Reduction	All	3,407.1
Less Investment:		
Central Fund	O&M	-982.0
Central Fund	PROC	-310.0
Net Reduction	All	2,115.1

Not reflected in this table are the savings in areas other than those directly associated with information technology, yet DoD sees the bulk of the payoff in the CIM initiative in functional improvements and savings beyond computers and communication systems. The true return on CIM investments will come in the business areas supported by CIM.

It is fundamental to CIM that a return on investment be maximized. The information technology budget has already been reduced in anticipation of savings to be achieved as a result of improving business practices and eliminating the duplicative development of multiple systems for the same functional requirement. Similarly, the goal of CIM is to move the Department to an investment strategy that will allow DoD to reap the greatest return on its investment.

Initial estimates of CIM costs and savings are based on the best data that DoD has in hand -- which are geared towards consideration of the information technology budget. DoD is taking a series of steps to obtain management data on CIM costs and the associated savings, regardless of the business area in which they accrue.

One of these steps will include cost recovery of information support through a fee-for-service mechanism. This is one of the key eight strategies for implementing CIM, and the ASD(C3I) and the DoD Comptroller have begun fact-finding and exploratory studies on moving to a fee-for-service environment. As DoD funding becomes more austere, DoD managers want more control over where their dollars are spent. This should give them one more tool for making their business case decisions.

Another step is top-level review of DoD information technology budget requests. The Joint Appropriations Conference Report for FY 1991 requests the DoD Components "to submit future budget requests for medical, material management, logistics, and other CIM-related systems through the CIM program director for coordination and review." For the FY 1992/1993, information technology budget request was reviewed in detail by the DoD Comptroller and ASD(C3I) staffs, with attention paid to the merits of each individual program in meeting mission needs and, for programs falling within the scope of the initial eight functional groups, CIM criteria. In preparation for future years, the ASD(C3I) is beefing up his staff to continue the

review of the information technology budget within the context of CIM principles.

Major Milestones

October 4, 1989 The Deputy Secretary of Defense announces the CIM initiative.

December 20, 1989 The ELG is chartered as a Federal Advisory Committee.

December 1989 First CIM functional groups are convened for training.

February 1990 ELG is convened.

May 1990 All eight initial CIM functional groups are in session.

June 1990 Interim Standard (Migration)n System Criteria are issued by the DoD Comptroller.

September 11, 1990 The ELG formally submits A Plan for Corporate Information Management for the Department of Defense to the Deputy Secretary of Defense.

November 5, 1990 Congress established the $1 billion CIM Transfer Fund.

November 16, 1990 CIM is institutionalized throughout the Department by the Secretary of Defense. Primary responsibility for CIM moves from the Comptroller to the ASD(C3I). ASD(C3I) becomes the DoD Senior IRM Official.

December 24, 1990 Initial allocation of CIM Transfer Fund is made, totaling over $800 million. First migration systems approved.

December 30, 1990 Deputy Comptroller (IRM) and staff becomes the DASD(IS) and staff under ASD(C3I)

January 14, 1991 The Deputy Secretary of Defense approves the ASD(C3I) plan for implementing CIM DoD-wide.

March 10, 1991 The Center for Information Management established within DCA

March 18, 1991 The Director of Defense Information is on board.

Concluding Remarks

The mission of CIM -- the improvement of business methods with information technology as an enabler -- is necessary and attainable. That is the consensus of the public and private sectors alike. Even as critics argue as to how to proceed and when successes can be realized, there is unanimity as to the philosophy and principles of corporate information management and the need for it in the Department of Defense and the Federal Government to achieve more effective and efficient methods of doing business.

Continued Congressional support for the CIM program is still warranted. In 1990 Congressional documents, the supportive language has lent added credence to the merit of the CIM initiative. This show of support has been a boon to the effort and is in part, a reason for its success thus far. Specifically, Congressional Conferees have strongly endorsed the CIM initiative, calling it a constructive effort undertaken by the Department of Defense to ensure standardization, quality, and consistency of data from DoD's multiple administrative management information systems. As we move closer to achieving our ends, it is hoped that Congress will continue this strong support.

The Office of Management and Budget (OMB) is also supporting the CIM initiative by designating it a Priority System for 1991. This designation gives DoD's CIM priority attention and ensures OMB oversight of CIM implementation. An objective of the Program for Priority Systems (PPS, formerly the Presidential Priority Systems) is to involve top management in the planning (including cost/benefit analysis) for use of modern information management methods, which includes the effective deployment of information technologies.

The Deputy Secretary of Defense continues his strong support of CIM. The transition to the Office of the ASD(C^{3}I)

and the concomitant reorganization of the information resources management organization within OASD (C^{3}I) adds to the program a vast array of support that will help ensure the institutionalization of CIM as a broad-based effort. This wholesale commitment to and confidence in the program guarantees its long-term success in the Department.

The CIM initiative has come a long way in a year and a half. Under the broad CIM umbrella, many groups and many people have accomplished much toward implementing CIM throughout DoD. But these achievements are just the beginning -- part of the groundwork -- for much more. The work ahead will be great, but it is hoped that these efforts will have long lasting effect in achieving DMR savings, improved business methods, quality products and services, and management effectiveness in support of DoD's military missions.